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AUTHOR	Reichelt, Paul A.; Werley, Harriet H.
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ABSTRACT

Many of today's teenagers are sexually experienced but lack the knowledge they need to avoid the emotional and physical problems resulting from unwanted pregnancy and veneral disease. With this fact in mind, a study was conducted in collaboration with the Planned Parenthood League Inc., of Detroit in order to generate specific content-oriented data in the area of evaluating sex education programs for teenagers. A sex knowledge questionnaire was administered to a sample of female teenagers before they attended an educational rap session and again approximately 10 weeks later. The results indicate that the education session provided a good deal of information which was retained over time. Detailed results are presented which show whether the teens knew, did not know, or were misinformed about each item, and knowledge scale scores are presented for various subgroups of the sample. (Author)

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EVALUATION OF INFORMATION IMPARTED IN A SEXUAL-CONTRACEPTIVE EDUCATIONAL PROGRAM FOR TEENAGERS

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Paul A. Reichelt and Harriet H. Werley

Both now at University of Illinois
at the Medical Center, Chicago

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EVALUATION OF INFORMATION IMPARTED IN A SEXUAL-CONTRACEPTIVE EDUCATIONAL PROGRAM FOR TEENAGERS[1]

Paul A. Reichelt and Harriet H. Werley[2]
University of Illinois at the Medical Center, Chicago

Two recent surveys of American teenagers have respectively reported that 28 per cent of all never-married 15 to 19 year-old women (Kantner & Zelnik, 1972) and 52 per cent of all teenagers (Sorensen, 1973) have had sexual intercourse. If we accept the conservative figure, which appears to be based on a more representative sample than the higher figure, and add to it an approximately equal number of males, we obtain an estimate that approximately 4.8 million teenagers aged 15 to 19 have had coital experience. In addition, there are both attitudinal and behavioral indications that premarital intercourse is beginning at younger ages and is increasing in extent among teenagers (Gallup, 1973; Kantner & Zelnik, 1972).

Unfortunately, as a consequence of engaging in sexual activity, there is a sizeable population of teenagers who are at risk or who are currently experiencing socio-emotional and physical problems as a result of unwanted pregnancy and venereal disease. In terms of unwanted teenage pregnancy, the urgency of the problem is indicated by the fact that between 1940 and 1968 the illegitimacy rates for 15 to 19 year-olds increased two to threefold (U.S. Bureau of the Census, 1971). Although high, these rates severely underestimate the number of premarital conceptions, because they do not include those conceptions that are terminated by abortion or legitimized by marriage. That many of these pregnancies are, in fact, unwanted is indicated by research which has directly elicited this information (Furstenberg, Gordis, & Markowitz, 1969) and by the fact that approximately one-third of the legal abortions in this country are performed on women under 20 years of age (Center for Disease Control, 1974a).

These facts are cause for concern because unwanted teenage pregnancy engenders serious health and social consequences. In terms of health concerns, compared to a woman in her twenties, the teenage mother runs a much higher risk that her baby will be stillborn, die soon after birth, or be born prematurely or with a serious mental or physical handicap (National Center for Health Statistics, 1972, 1973a). As for the adolescent mother herself, maternal mortality rates and rates for complications of pregnancy such as prolonged labor, anemia, fetopelvic disproportion, and caesarean section are higher for teenagers (Maternal and Child Health Service, 1972; Menken, 1972).

The psychological health cost to the teenage mother is indicated by a study which showed a strong relationship between unplanned pregnancy and postpartum psychiatric symptoms, with unplanned pregnancy being highest among teenagers and unmarried women (Nilsson, Kaij, & Jacobson, 1967), and by the high suicide attempt rate among teenage mothers (Gordon, 1972). In terms of child development, studies indicate that children born to teenage mothers perform less well on measures of intelligence (Illsley, 1967; Record, McKeown, & Edwards, 1969; Oppel & Royston, 1971), and teenage parents appear to be less capable of effectively nurturing and caring for their children (Oppel & Royston, 1971; Delissovoy, 1973).

Adolescent motherhood also results in serious negative social consequences such as permanent disruption of education, lessened economic opportunities, being stigmatized for bearing an illegitimate child, and restriction of the development of the woman's nonfamilial potential (Coombs, Freedman, Friedman, & Pratt, 1970; National Education Association, 1970; Presser, 1971). Also, the divorce rate for teenage marriages is extremely high (National Center for Health Statistics, 1973b).

The above facts are graphically illustrated by a follow-up study of 100

teenage mothers (Sarrel & Davis, 1966) which showed that very few completed high school, 60 percent were on welfare, 36 of the 100 married, and 25 of those who married got divorced within five years. In the five year period of time, these 100 women produced a total of 340 babies!

Turning now to the problem of venereal disease among teenagers, it is already pandemic in this country. From 1960 to 1972 the number of reported cases of teenage venereal disease has almost quadrupled from 61,265 to 218,870 (Center for Disease Control, 1974b). These reported cases are estimated to represent only about ten percent of the actual number of cases (Fleming, Brown, Donohue, & Branigin, 1970). In reviewing these figures it should be remembered that the consequences of untreated venereal disease can be as extreme as death.

In view of the magnitude and seriousness of the problems discussed above, it comes as no surprise that the literature contains many discussions which conclude that there is a definite need for sex education for adolescents. Sex knowledge is a necessary, though not sufficient, condition for the avoidance of the problems of unwanted teenage pregnancy and venereal disease. Thus, it is unfortunate that the literature suffers from a lack of content-oriented data in the area of evaluating sex education programs for teenagers.

In order to begin filling in this gap, a study was conducted in collaboration with the Planned Parenthood League, Inc., of Detroit. As part of its commitment to the community, the Planned Parenthood League operates the Youth Education on Sex (Y.E.S.) Teen Center. The Center provides free nonprescription contraception for males and females, prescription contraception and related medical services for females aged 17 and under, and sex education for both male and female adolescents. During the period of this study, the sex education program was in the form of an informal rap session.

The rap sessions are held in a "living room" at the Teen Center which has been carpeted and brightly decorated by teen volunteers. The rap leaders are young

staff members who are both factually knowledgeable and attuned to the psychosexual concerns of the teenagers. They function as a source of factual information and as a facilitator of discussion among the adolescents. The rap sessions are conducted in an atmosphere of psychological support where questions and concerns may be aired freely.

Method

Subjects. In order to obtain a measure of the teenagers' sex knowledge both before and sometime after attending the rap session, it was necessary to restrict the sample to those teenagers who returned to the Teen Center for birth control pills. Thus, the sample is composed of 367 females under 18 years of age.

Procedure. Upon arriving at the Teen Center for the rap session, each subject was given a questionnaire, which she was asked to fill out and hand in before the start of the education session. Approximately ten weeks later when the subject returned to the Center for contraceptive supplies, she was again asked to complete the questionnaire. Because of the time span involved and because the teens were not allowed to retain the questionnaire, the use of parallel forms of the instrument was not considered necessary. Participation in the study was, of course, voluntary.

Questionnaire. The printed questionnaire was composed of two sections. The first part requested background information on the subject and the second section contained a 39-item test of sex knowledge. The posteducation version did not contain the background section. Because it was considered important to be able to distinguish between teenagers who were uninformed and those who were misinformed, a three-part response scale was used for the second part of the questionnaire. The subjects could respond to each question by circling either "true," "false," or "don't know."

Results

This preliminary report of the data will present a description of the subjects and will compare the extent of their sex knowledge prior to the rap session with their knowledge level approximately ten weeks after the education session. Percentages reported in this paper are adjusted for missing data, i.e., based just on those subjects who answered the item.

Description of subjects. Table 1 presents background information for the young women. The age range is 14 to 17, and the mean age is 16.2 years. The

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Insert Table 1 about here

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teens are primarily white but the proportion of blacks in the sample is fairly substantial (25%). Although the Teen Center is located in the City of Detroit, almost half of the young women do not reside in Detroit but come into the city from the surrounding metropolitan area in order to attend the clinic. This is an indication of the difficulty faced by teenagers who seek to obtain prescription contraception.

The majority of the teenagers are from the middle and lower-middle socio-economic classes as measured by Hollingshead's (1957) Two Factor Index of Social Position. As one would expect from the age distribution, the teens are clustered in the upper high school grades. Only a small percentage of the young women (4%) dropped out of school prior to completion. Eighty six percent (86%) of the teens had had sexual intercourse prior to their attending the rap session. This last figure means that 14 percent of these young women were obtaining the most effective contraception available before having intercourse. An additional point of interest is that 76 percent of the sexually experienced teenagers had used some method of contraception at least once. However, this percentage should by no means be taken as an indication of the number of teens who were consistently using effective contraception.

Knowledge of venereal disease. Table 2 presents the pre- and postrap data for the questionnaire items concerned with venereal disease. On both the

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Insert Table 2 about here

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venereal disease items and on the abortion items, to be discussed later, the teens initial level of knowledge was substantial and thus the degree of increase attributable to the rap session is not as dramatic as it is for other sections of the questionnaire. However, it is still true that on a third of the venereal disease items there is better than a ten percentage point increase in the number of correct responses. The results for this section are unique in that they contain the only item on which there was minor slippage in the number of correct answers. This may be due to the teens learning that if detected early, venereal disease is easily treated and need not be a cause of permanent physiological damage. In addition, with a prerap level of 94 percent, the influence of a ceiling effect must be kept in mind.

Knowledge of birth control. Table 3 presents the data concerning the teenagers' knowledge of contraception. The items are grouped by method with a

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Insert Table 3 about here

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miscellaneous subsection at the end of the table. Looking first at the items concerned with the birth control pill, it can be seen that the teenagers' knowledge of the pill showed a very substantial improvement. Thus, even for a topic such as the pill which has received widespread coverage in the mass media, there is a need for educational programs directed specifically at teenagers which give them a chance to integrate and clarify information they may have been exposed to previously.

The next two sections of the table are concerned with the intrauterine device (IUD) and the diaphragm. Here also there are substantial increases in the percentage of correct responses. It appears that the confusion between the two methods, which is apparent from the prerap responses to the items "The IUD is inserted before each act of intercourse" and "The diaphragm must be worn at all times," has been reduced considerably by the time the questionnaire was readministered.

In regard to the condom, two points of interest emerge. First, the percentages of correct answers on the prerap questionnaire were lower than expected considering that the condom is probably the most widely used contraceptive device among teenagers. And second, the rap session did not convince a majority of the teens that the condom is strong enough to be a reliable contraceptive. This type of incorrect belief can needlessly curtail the use of condoms by teenagers and it may have contributed to the decision of these young women to begin using the pill.

For the other readily available nonprescription contraceptive, the spermicides, the teens' level of knowledge after attending the rap is very high, except for one important item. Although the degree of correct response to the item about whether or not spermicides should be washed out with a douche immediately after intercourse increased greatly from pre- to postrap, 15 percent of the teens would still immediately wash out the spermicide, thereby reducing its effectiveness.

The last section of Table 3 contains the responses to eight miscellaneous items of importance for effective contraception. The percentage of correct responses prior to the rap session ranged from 53 to 79 percent across the eight items. By the time of the postrap questionnaire, the range had shifted to 73 to 91 percent which is a gratifying degree of change.

Knowledge of abortion. The last section of the sex knowledge questionnaire

to be discussed contained several items concerning abortion. Table 4 reveals

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Insert Table 4 about here

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that the teens were quite knowledgeable about this area prior to the rap session. Thus, the degree of increase resulting from the education session is not large.

Knowledge of sample subgroups. In order to efficiently examine the sex knowledge data for subgroups of the sample defined by their demographic characteristics, two scales were created. The Total Knowledge Scale is based on the 39 venereal disease, birth control, and abortion items displayed in Tables 2, 3, and 4. The Birth Control Knowledge Scale is composed of just the 30 contraception items from Table 3. This scale is thus a subpart of the Total Knowledge Scale. An individual's scale score is calculated as the number of items answered correctly minus the number answered incorrectly with zero weight given to "don't know" or missing data. This is the "rights minus wrongs" scoring method commonly used for true-false questions.

The mean scores for the subgroups on the Total Knowledge and the Birth Control Knowledge scales are presented in Table 5. To briefly comment on these data, the following points of interest are apparent. First, for the sample as a

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Insert Table 5 about here

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whole there is a significant increase in mean score on the scales following participation in the sex education rap session. This summarizes the results previously discussed for the individual questionnaire items.

Second, there are substantial increases in postrap scale scores which are of roughly the same magnitude for all the various subgroups. And third, for any

given demographic variable, the postrap score for the subgroup which was lowest on the prerap measure exceeds the prerap score for the subgroup that was highest on the prerap measure. In other words, at the least, the rap session helps everyone increase their knowledge to a level which exceeds the prerap session score of the most knowledgeable subgroup. Those few subgroups that do not fit these general patterns are the subgroups with such a small N (e.g., 7th and 8th graders are only 1% of the sample) that the mean is highly unstable. The implication of these results is that although the education session is providing a good deal of information, it can be made even more effective by directing special attention to the subgroups that score low on the prerap measure in order to bring them up to the same high postrap level attained by the subgroups that score high on the prerap test.

Discussion

A distinguishing feature of the Y.E.S. Teen Center, as compared to many other community service agencies that provide contraceptive services, is that the Y.E.S. Teen Center requires attendance at an education session prior to receiving birth control services. The wisdom of this policy is shown by the fact that prior to the education session, on two-fifths of the questionnaire items not even a simple majority of the young women could provide the correct answer. However, after participating in the rap session there were only two items where less than a majority knew the correct answer.

It is interesting to note that the item with the second lowest percentage of correct responses before and the lowest percentage correct after the rap concerns the strength of the condom. The teens are obviously rating condoms as much less reliable than studies in the professional literature indicate, and the rap session was not sufficient to convince a majority of them otherwise. This erroneous belief which is evidently prevalent among teenagers (Reichelt & Werley, 1974)

can have the effect of needlessly curtailing the use of an easily available contraceptive which can also be of some help in the current battle against teenage venereal disease.

Of course, it can be argued that to a large extent the information covered by the sex knowledge questionnaire is irrelevant for the current sample because they are using the highly effective birth control pill. However, there are several good reasons for providing them with sex education. First of all, the factual information will quickly increase in relevance for a given teen if for some reason, such as moving out of the area, she should drop out of the program. Second, because teenagers' major source of sex information is their peer group (Thornburg, 1972; Reichelt & Werley, 1974) it is important to get correct information to as large a part of the teen population as possible. And third, the education sessions also provide the teens with an opportunity to freely discuss their concerns in the psychosexual area.

In sum, the results indicate that sex education programs such as provided by the Y.E.S. Teen Center are both needed and valuable. However, agencies such as the Teen Center cannot be expected to provide sex education for all adolescents. More broadly based national programs such as through the public school system (a survey reported by Lipson & Wolman, 1972 showed that only 25% of the American public are against high schools providing birth control information) are needed, and the time to begin is long overdue.

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Footnotes

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[2]Dr. Reichelt is Assistant Professor and Dr. Werley Professor and Associate Dean for Research at the College of Nursing, University of Illinois at the Medical Center, Chicago, Illinois. When this research was initiated and conducted at Wayne State University, in collaboration with the Planned Parenthood League, Inc., of Detroit, both authors were affiliated with the Center for Health Research, of which Dr. Werley was the Director.

TABLE 1

Characteristics of the Respondents
(N=367)

Variable	Percent
Age:	
14	3
15	14
16	44
17	40
Race:	
Black	25
White	73
Other	2
Residence:	
Detroit	54
All other	46
Socioeconomic Status:	
High	8
	11
	24
	41
Low	17
Educational Level:	
7 and 8	1
9	3
10	16
11	44
12	29
College	1
Not in school--completed high school	2
Not in school--did not complete high school	4
Sexually Experienced:	
Yes	86
No	14

TABLE 2

Knowledge of Venereal Disease
(N-367)

Questionnaire Item[a]	Correct Percent		Incorrect Percent		Don't Know Percent	
	Pre[b]	Post	Pre	Post	Pre	Post
Many cases of VD are caught by contact with toilet seats, drinking fountains, and swimming pools. (F)	78	83	13	8	9	9
If the symptoms of VD disappear by themselves, no treatment is needed. (F)	90	94	1	2	9	4
Once you've had VD you can't get it again. (F)	77	84	10	12	13	5
VD is not really dangerous to your health. (F)	94	91	4	7	3	2
VD can be treated in Michigan without parental consent. (T)	71	82	2	3	28	15
Using a rubber can help prevent the spread of veneral disease. (T)	68	79	11	9	21	12

Note.--[a]Correct answer is shown in parentheses: T=true; F=false.

[b]Pre is before participating in the sex education session, and post is approximately ten weeks later.

TABLE 3

Knowledge of Birth Control
(N=367)

Questionnaire Item[a]	Correct Percent		Incorrect Percent		Don't Know Percent	
	Pre[b]	Post	Pre	Post	Pre	Post
Birth Control Pill						
The pill must be stopped every year for three months. (F)	36	72	3	3	62	25
The pill is generally dangerous to use. (F)	73	94	1	3	26	3
The pill may be taken along with other medications without decreasing its effectiveness. (T)	35	72	5	8	60	20
The pill may be taken by a girl who uses alcohol and/or drugs. (T)	38	68	11	8	51	24
The pill may not be taken if the woman has a history of certain illnesses. (T)	38	63	4	10	58	27
The pill is the most effective method of birth control. (T)	79	95	4	2	17	3
IUD (intrauterine device, such as the loop or coil)						
The IUD is inserted before each act of intercourse (making love). (F)	41	77	19	12	40	11
The IUD cannot be felt by the man or woman during intercourse. (T)	40	78	8	7	52	15
The IUD is the second most effective method of birth control. (T)	30	75	6	4	64	21
The IUD usually works best if the uterus (womb) has been stretched by a previous pregnancy. (T)	24	46	6	15	71	39

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TABLE 3 (cont.)

Questionnaire Item[a]	Correct Percent		Incorrect Percent		Don't Know Percent	
	Pre[b]	Post	Pre	Post	Pre	Post
Diaphragm						
The diaphragm must be worn at all times. (F)	44	72	15	16	41	12
A diaphragm should be used only after having been fitted for it by a doctor. (T)	62	88	5	5	33	7
The effectiveness of the diaphragm is increased when used with a cream or jelly. (T)	37	81	6	5	57	13
The diaphragm cannot be felt by either the man or woman when properly in place. (T)	49	84	2	2	49	14
Condom (rubber)						
A rubber should be tested before use. (T)	54	70	13	19	33	11
Rubbers break easily. (F)	18	31	51	49	31	20
The rubber should be held around the base of the man's penis when withdrawn. (T)	44	87	4	2	52	11
Spermicides (foams, creams & jellies)						
They should be inserted just before each intercourse. (T)	73	95	6	3	21	2
They work by killing sperm. (T)	63	91	4	5	33	4
They can be bought without a prescription in any drug store. (T)	73	93	6	3	21	4
When used with a rubber, they are a highly effective birth control method. (T)	40	84	10	8	50	9
They should be washed out with a douche immediately after intercourse. (F)	17	63	26	15	57	21
Miscellaneous						
Rhythm is a highly effective method of birth control. (F)	53	88	5	4	42	9

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TABLE 3 (cont.)

Questionnaire Item[a]	Correct Percent		Incorrect Percent		Don't Know Percent	
	Pre[b]	Post	Pre	Post	Pre	Post
Withdrawal (pulling out) is a highly effective method of birth control. (F)	68	90	12	4	21	6
Douching after intercourse is a highly effective birth control method. (F)	62	91	7	4	32	6
Menstruation (monthly period) is a clearing of the uterus to prepare again for possible pregnancy. (T)	76	88	10	6	14	6
A woman's fertile time (when she is most likely to become pregnant) covers the middle of the interval between her menstrual periods. (T)	65	74	10	8	25	18
A girl can get pregnant the first time she has intercourse. (T)	79	87	9	9	12	4
Sperm can live in the female's reproductive system for about 72 hours (3 days). (T)	45	73	16	10	39	16
If a woman does not have an orgasm (climax) during intercourse, she can't get pregnant. (F)	74	85	4	3	23	12

Note.--[a]Correct answer is shown in parentheses: T=true; F=false.

[b]Pre is before participating in the sex education session, and post is approximately ten weeks later.

TABLE 4

Knowledge of Abortion
(N=367)

Questionnaire Item[a]	Correct Percent		Incorrect Percent		Don't Know Percent	
	Pre[b]	Post	Pre	Post	Pre	Post
An abortion can be done safely and easily by a doctor during the first 12 weeks of pregnancy. (T)	83	89	4	3	14	8
Having an abortion will make the woman sterile (unable to have children in the future). (F)	89	93	2	2	9	6
Anyone can tell if a girl has had an abortion. (F)	88	92	1	1	11	7

Note.--[a]Correct answer is shown in parentheses: T=true; F=false.

[b]Pre is before participating in the sex education session and post is approximately ten weeks later.

TABLE 5

Comparison of Sample Subgroup Means for Total Knowledge Scale and for Birth Control Knowledge Scale

Sample Subgroups	Total Knowledge[a]		Birth Control Knowledge[b]	
	Pre[c]	Post	Pre	Post
Age:				
14	11.25	21.25	6.92	14.92
15	16.02	27.18	9.96	20.10
16	18.81	28.68	12.19	21.30
17	19.56	28.78	12.63	21.26
Race:				
Black	14.66	23.48	9.46	17.14
White	19.83	30.08	12.75	22.34
Other	16.00	21.33	9.67	15.83
Socioeconomic Status:				
High	23.35	32.35	15.74	24.48
	22.45	31.38	15.23	23.29
	19.68	29.94	13.00	22.20
	18.37	28.15	11.67	20.60
Low	17.42	27.14	10.78	20.24
Educational Level:				
7 and 8	9.33	15.33	5.67	9.67
9	13.20	22.80	8.90	17.00
10	16.42	27.68	10.00	20.50
11	18.67	28.22	12.11	20.84
12	20.22	29.58	13.13	22.05
College	24.00	34.25	17.50	26.75
Not in school--completed high school	21.00	29.17	13.33	21.00
Not in school--did not complete high school	14.93	25.93	9.50	18.57
Total Sample	18.48	28.27	11.89	20.92

Note.--[a]Based on 39 items concerning venereal disease, birth control, and abortion. Total score equals number correct minus number incorrect, with a weighting of zero for "don't know" or no response.

[b]Based on 30 birth control items (a subset of the Total Knowledge Scale). Scoring procedure is the same as that used for the Total Knowledge Scale.

[c]Pre is before participating in the sex education session and post is approximately ten weeks later.